

## Title (en)

Micro flow filtration system and integrated microfluidic device

## Title (de)

Mikroflussfiltrationssystem und integrierte mikrofluidische Vorrichtung

## Title (fr)

Système de filtration à micro-écoulement et dispositif microfluidique intégré

## Publication

**EP 2645078 A1 20131002 (EN)**

## Application

**EP 12162011 A 20120329**

## Priority

EP 12162011 A 20120329

## Abstract (en)

A micro fluid filtration system (100) preferably for increasing the concentration of components contained in a fluid sample has a fluid circuitry (1). The fluid circuitry (1) comprises the following elements: A tangential flow filtration element (7) capable for separating the fluid sample into a retentate stream and a permeate stream upon passage of the fluid, an element for pumping (3) for creating and driving a fluid flow through the fluid circuitry (1) and at least one element for obtaining information about the properties of the fluid sample within the circuitry. The circuitry further comprises a plurality of conduits (24) connecting the elements of the fluid circuitry (1) through which a fluid stream of the fluid sample is conducted. The circuitry (1) has a minimal working volume of at most 5 ml, which is the minimal fluid volume retained in the elements and the conduits (24) of the circuitry (1) such that the fluid can be recirculated in the circuitry (1) without pumping air through the circuitry (1). An integrated micro fluidic device (20) of the circuitry (1) contains the functionality of at least two elements of the group of elements of the circuitry (1).

## IPC 8 full level

**G01N 1/40** (2006.01); **B01D 63/00** (2006.01); **B01D 63/08** (2006.01); **B01L 3/00** (2006.01)

## CPC (source: EP US)

**B01D 61/147** (2013.01 - US); **B01D 61/22** (2013.01 - US); **B01D 63/005** (2013.01 - US); **B01D 63/087** (2013.01 - EP US); **B01D 63/088** (2013.01 - EP US); **B01L 3/502715** (2013.01 - EP US); **B01L 3/502753** (2013.01 - EP US); **B29C 45/14** (2013.01 - US); **B29C 70/72** (2013.01 - US); **F16B 33/004** (2013.01 - US); **F16B 33/006** (2013.01 - US); **F16B 35/00** (2013.01 - US); **B01D 2311/14** (2013.01 - EP US); **B01D 2311/246** (2013.01 - EP US); **B01D 2311/25** (2013.01 - EP US); **B01D 2313/60** (2022.08 - EP US); **B01D 2315/10** (2013.01 - EP US); **B01L 2200/0647** (2013.01 - EP US); **B01L 2200/146** (2013.01 - EP US); **B01L 2300/0627** (2013.01 - EP US); **B01L 2300/0681** (2013.01 - EP US); **B01L 2300/0816** (2013.01 - EP US); **B01L 2300/0864** (2013.01 - EP US); **B01L 2300/088** (2013.01 - EP US); **B01L 2400/0478** (2013.01 - EP US); **B01L 2400/0487** (2013.01 - EP US); **B29K 2105/08** (2013.01 - US); **B29L 2031/727** (2013.01 - US); **G01N 2001/4088** (2013.01 - EP US); **Y10T 403/473** (2015.01 - EP US)

## Citation (applicant)

WO 2006026253 A2 20060309 - MILLIPORE CORP [US], et al

## Citation (search report)

- [XAI] GB 2417913 A 20060315 - SCHLUMBERGER HOLDINGS [VG]
- [A] US 2009101559 A1 20090423 - BALA SUBRAMANIAM ANAND [US], et al
- [A] US 2007151924 A1 20070705 - MIR LEON [US], et al
- [A] US 2005092662 A1 20050505 - GILBERT JOHN R [US], et al
- [I] MUHD NAZRUL HISHAM ZAINAL ALAM ET AL: "A continuous membrane microbioreactor system for development of integrated pectin modification and separation processes", CHEMICAL ENGINEERING JOURNAL, ELSEVIER SEQUOIA, LAUSANNE, CH, vol. 167, no. 2, 17 September 2010 (2010-09-17), pages 418 - 426, XP028174491, ISSN: 1385-8947, [retrieved on 20101022], DOI: 10.1016/J.CEJ.2010.09.082

## Cited by

EP3077505A4; US10739237B2; US10130902B2; US10905978B2

## Designated contracting state (EPC)

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## Designated extension state (EPC)

BA ME

## DOCDB simple family (publication)

**EP 2645078 A1 20131002**; CN 104220861 A 20141217; CN 104220861 B 20180420; EP 2831561 A1 20150204; EP 2831561 B1 20200708; JP 2015514003 A 20150518; JP 6110473 B2 20170405; SG 11201405933R A 20141030; US 11045767 B2 20210629; US 2015041375 A1 20150212; US 2018245619 A1 20180830; US 2020149578 A9 20200514; WO 2013144089 A1 20131003

## DOCDB simple family (application)

**EP 12162011 A 20120329**; CN 201380018097 A 20130325; EP 13711703 A 20130325; EP 2013056294 W 20130325; JP 2015502279 A 20130325; SG 11201405933R A 20130325; US 201314386085 A 20130325; US 201815962700 A 20180425